

WASHINGTON STATE  
DEPARTMENT OF  
ECOLOGY

# Sinclair & Dyes Inlets Fecal Coliform TMDL

*March 15, 2007*

Sally Lawrence

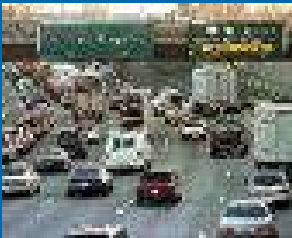
Water Quality Program

(425) 649-7036

slaw461@ecy.wa.gov

# Overview - 1

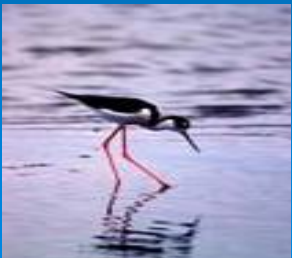
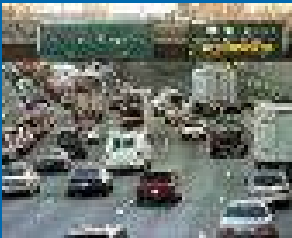
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- **TMDL Progress 2006**
- **Preliminary model runs**
- **“Marine areas of concern”**
- **For each area:**
  - Responsible for point sources
  - Responsible for nonpoint sources
- **Municipal Stormwater Permit**

# Overview - 2

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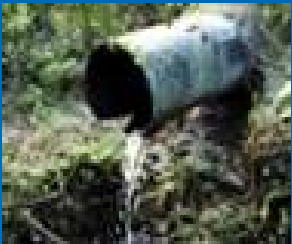
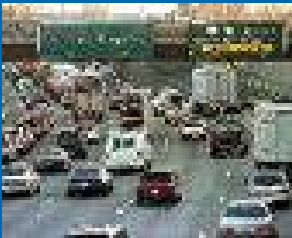
## Implementation Plan Elements:

- Current programs
- New programs/higher level of effort
- Schedule for new programs
- Expected date/year to meet Water Quality Standards
- Monitoring plan
- Tracking implementation

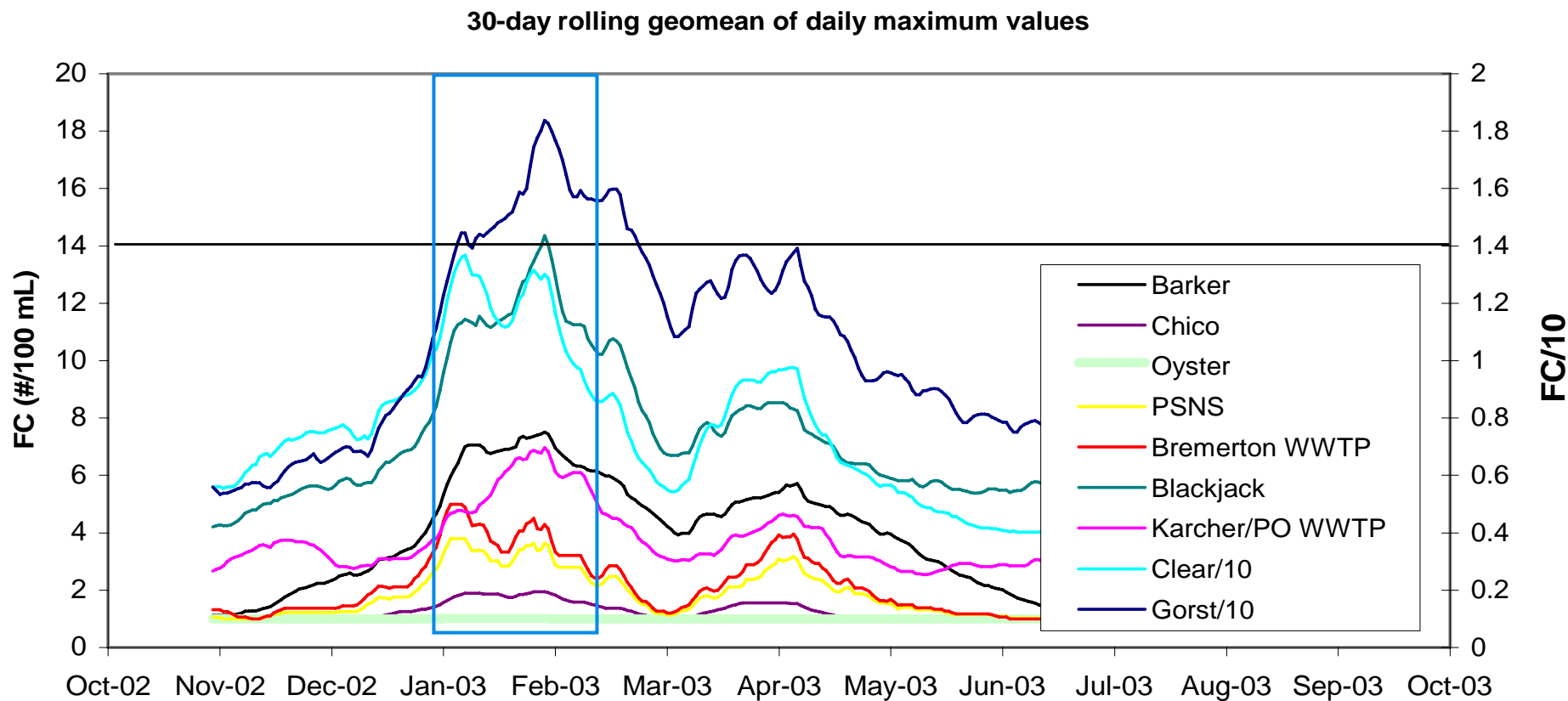
# Critical Conditions

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40 CFR 130.7(c)(1):  
***“TMDLs shall take into account critical conditions for streamflow, loading, and water quality parameters.”***

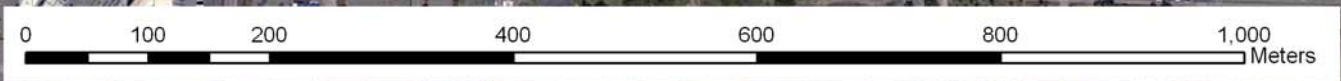


# TMDL Progress - 2006



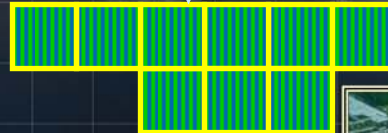


# Clear Creek Estuary



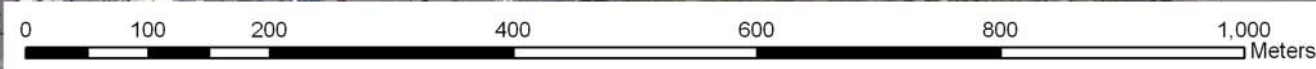
100/100 mL

Geomean < 14/100 mL YES



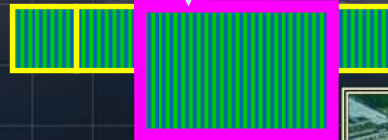


# Clear Creek Estuary



200/100 mL

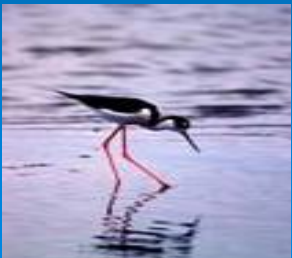
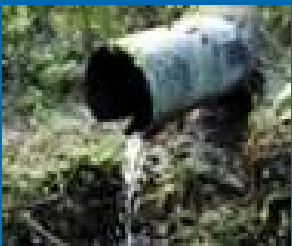
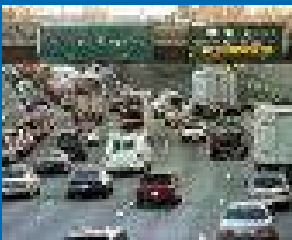
<10% samples >43/100 mL NO



# Interim results

- Clear Creek will need more stringent targets than 200 per 100 mL if single grid cells or 3 or 4 cells grouped
- Clear Creek must meet freshwater quality standards to meet marine standards if 6 or 9 cells are grouped

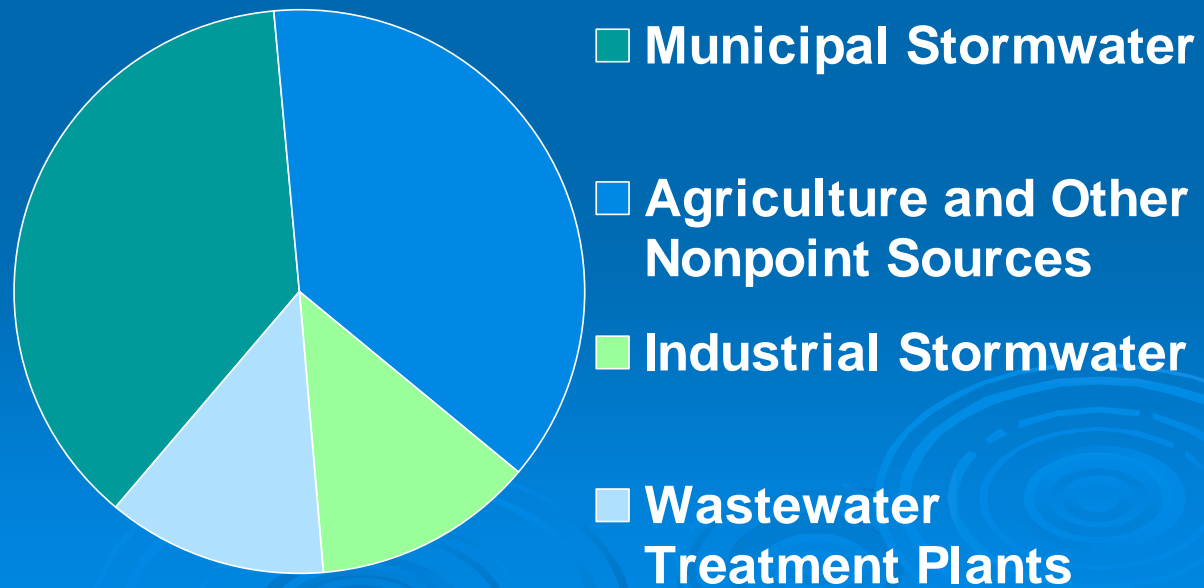




# Technical study determines how much bacteria reduction needs to occur

Municipalities, industries and WWTPs receive a **Wasteload Allocation (WLA)**

Nonpoint sources receive a **Load Allocation**



4 Strawberry Cr.

3 Clear Cr.

5

9

11

7

2 Chico Cr.

12

14

15

16

42

45

43 Gorst Cr.

1 Barker Cr.

10

6

8

13

17

41

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Blackjack Cr.

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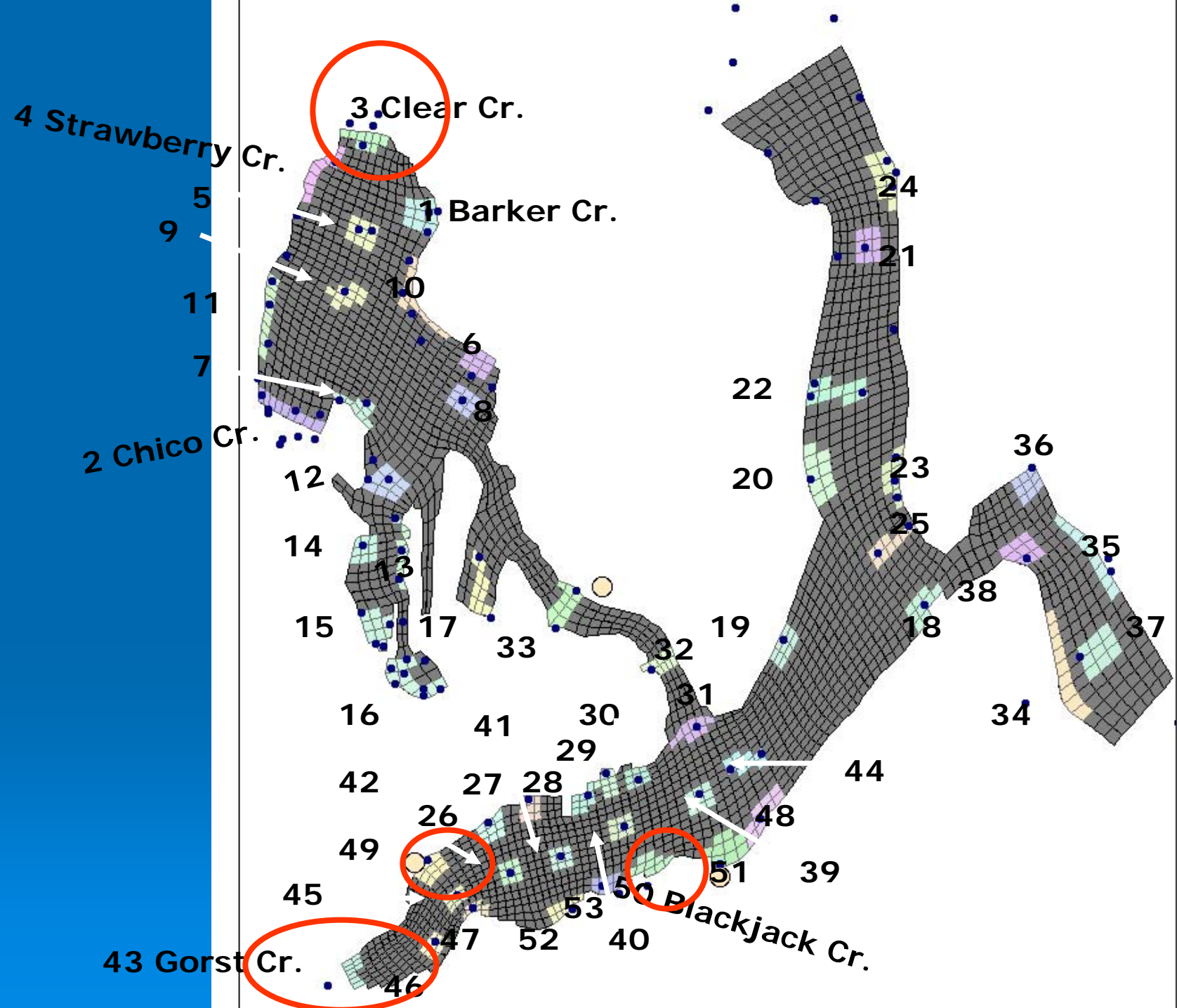
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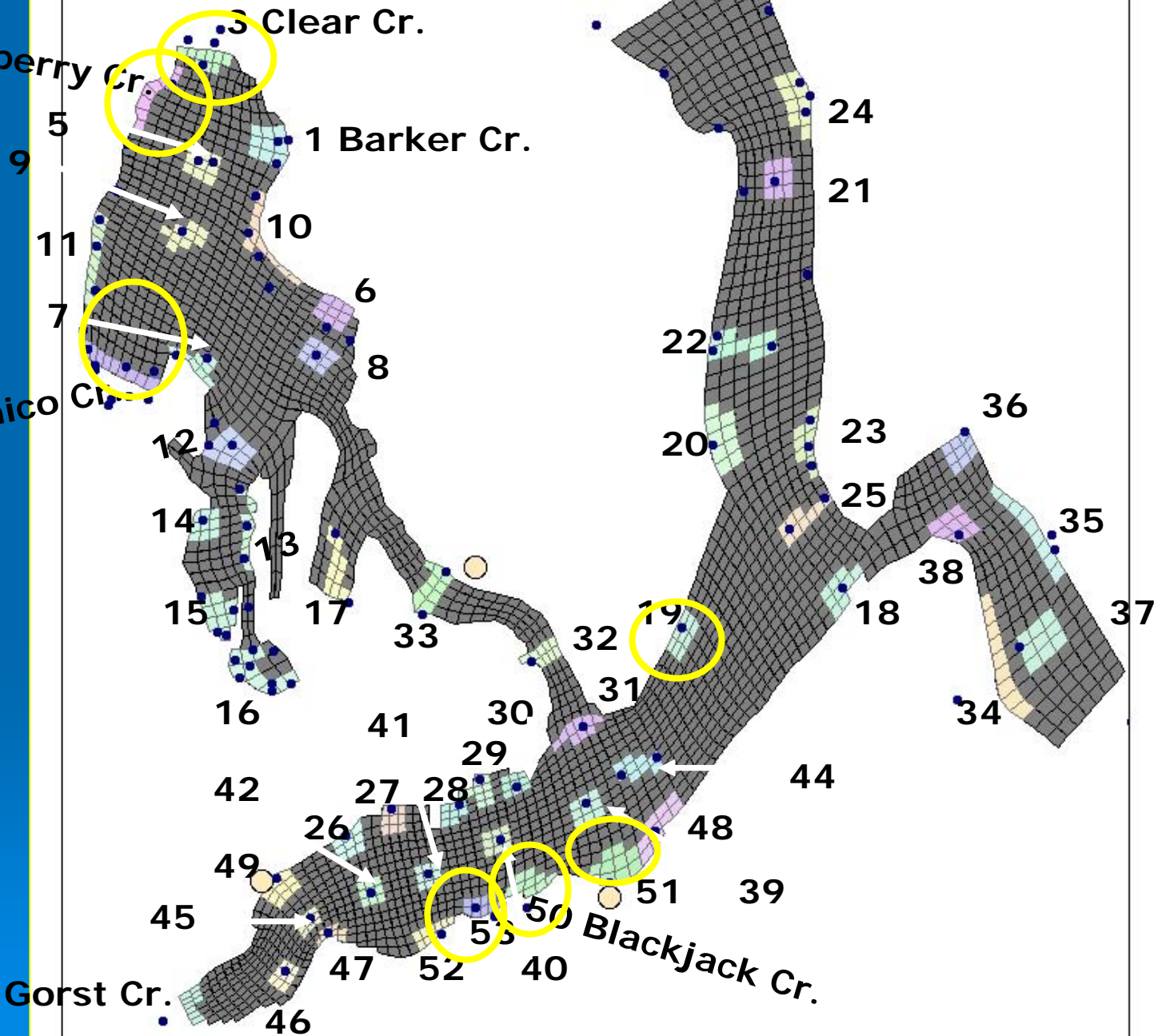


4 Strawberry Cr.  
3 Clear Cr.  
1 Barker Cr.

2 Chico Cr.

43 Gorst Cr.

Blackjack Cr.



# Preliminary “Areas of Concern”

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**(1) Model-predicted locations with  
FC exceedances of standard**

**(2) “Underpredicted”  
shoreline areas**

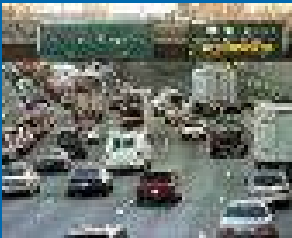
**(3) Streams with FC  
violations in late  
summer, low-flow  
season**

**(4) “Dirty” storm discharge**



# Next steps - 2007

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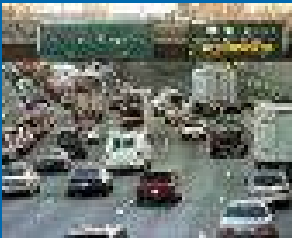


- **Setting Wasteload Allocations and Load Allocations**
- **Implementation Plan meetings in 2007**
  - **March 15<sup>th</sup> & “*To be determined*”**
  - **Review problem locations/sources**
  - **Review existing practices**
  - **Define needed practices, structures, programs**



# Implementation Meetings

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- Purpose – review draft TMDL and advise Ecology (Ecology makes final decision)
- Develop better recommendations with local knowledge
- Incentive for a good plan: if recommendations prove effective, may not need permit requirements in 5 years

# Point Sources: NPDES Stormwater, WWTP Permits

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- EPA reviews and approve all TMDLs.
- Stormwater and Wastewater **must** receive a WLA if they are contributing to the TMDL problem.
- NPDES permits **must** address TMDLs.

*Where a TMDL has been approved, NPDES permits must contain effluent limits and conditions consistent with the TMDL (40 CFR 122.44(d)(1)(vii)(B) and 40 CFR 122.34(e)(1)).*



# Nonpoint Sources

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Surface runoff to streams,  
marine waters

Pet waste

Failing septic systems

Wildlife

*Recommended (Voluntary)  
Programs:*

Septic system education  
programs

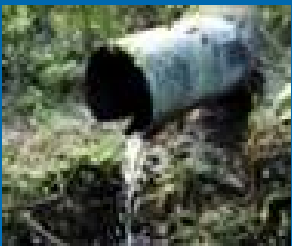
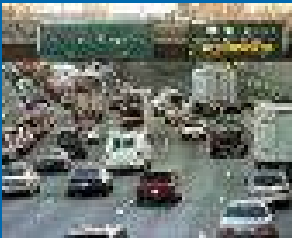
Pet waste education





# EPA's Guidance for establishing stormwater permit limits through TMDLs

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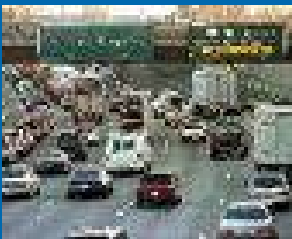
- EPA allows effluent limits to be expressed in the form of BMPs, therefore:
- Municipal Stormwater Permits **will not** have numeric permit limits.
- WLAs **are not** numeric permit limits.

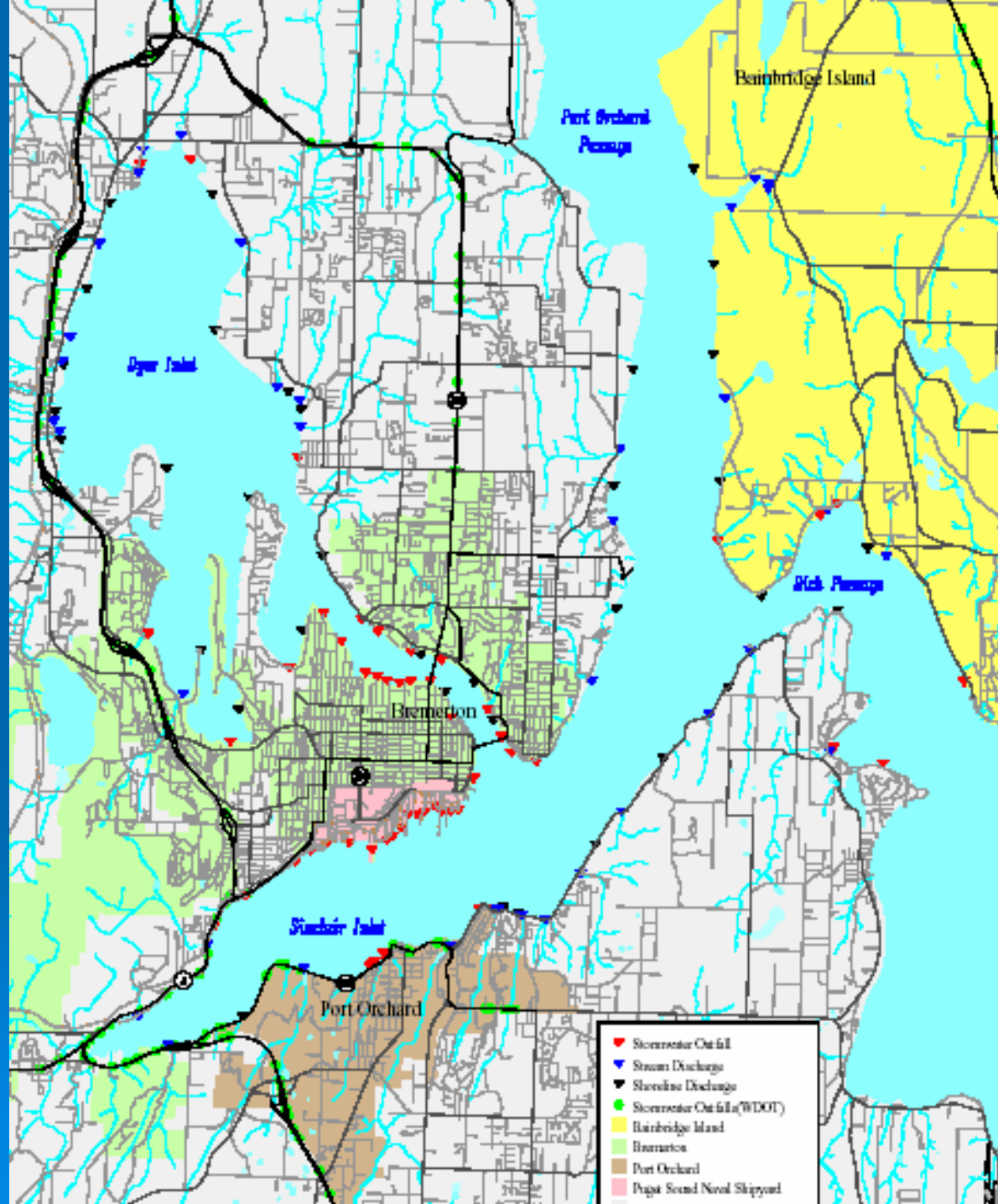
# Stormwater BMPs for areas of Existing Development

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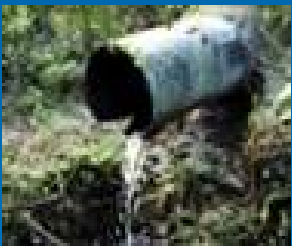
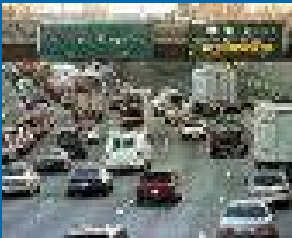
➤ Ecology's Western Washington Stormwater Manual addresses new development, but also...

- Applicable BMPs for areas with existing development are defined in Volume IV
- Applicable BMPs can include both "Operational" and "Structural" BMPs.





# Ecology's Phase II Municipal Stormwater Permit



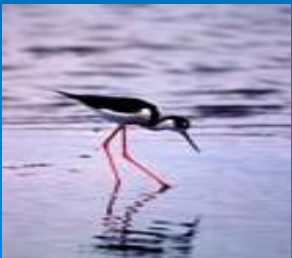
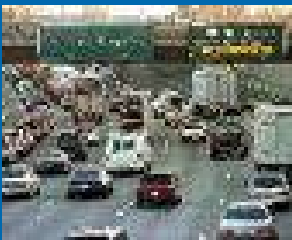
- Issued December 2006
- Six required elements:
  - Public education & outreach
  - Public involvement/participation
  - Illicit discharge detection and elimination
  - Construction site stormwater runoff control
  - Post construction stormwater management in new and re-development
  - Pollution prevention/good housekeeping for municipal operations
- Plus two – compliance with TMDLs, and evaluation and assessment of the stormwater program

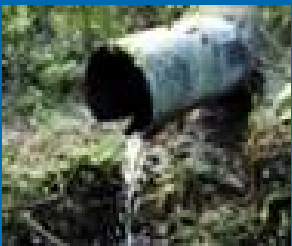
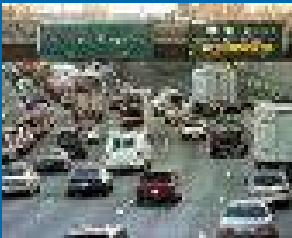


# What stormwater BMPs might be required by a TMDL?

- Review sources and identify programs or activities to address them.
- Are these programs and activities already required under the Phase II stormwater permit?
- Are specific programs or activities (“above and beyond” the permit) needed?

*Such additional requirements should be known to be effective*





# Phase II Municipalities

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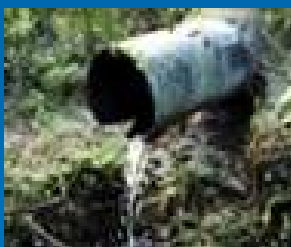
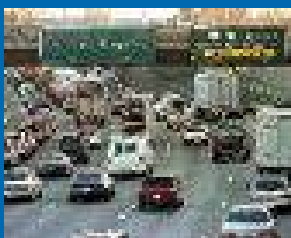
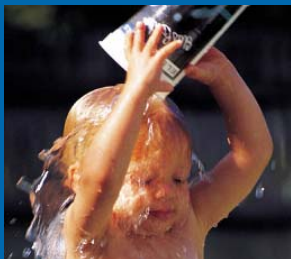
- **What elements of the permit already in place?**
- **Land area that drains to an “Area of Concern” –**
  - **Storm system mapped?**
  - **Structural BMPs? Age?**
  - **Frequency of cleaning & inspections (O & M)**
  - **Other ways to reduce sources?**

# Phase II municipalities (2)

- **Area of Concern:**
  - Current program sufficient?
  - Better education & outreach to commercial property owners?
- **Kitsap Health District North Dyes Inlet Restoration Project**



# North Dyes Inlet Restoration Project (Kitsap Health District)



- **Preliminary results show FC reductions**
- **County SSWM – prior mapping, IDDE**
- **Improvements**
  - **Sediment removal & vault cleaning by commercial property owners**
  - **Maintenance of ponds – vegetation, sediment removal**
  - **2 properties – bioswales rebuilt**
  - **3 properties – pond/swale extensive cleanup**



# TMDL Monitoring

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**Each municipality,  
industry monitor its  
“Areas of Concern”**

**Follow common  
protocol**

**Annual meeting to  
review water quality  
data,  
implementation**



# Dyes Inlet



# Sinclair Inlet Cleanup April 21<sup>st</sup>!

